

Cumulative Index 1991

Volume 8

January	MINIMAL INCISION SURGERY, pages 1-247
April	COMPLICATIONS OF FOOT SURGERY, pages 249-440
July	REARFOOT SURGERY, pages 401-722
October	WOUND HEALING, pages 723-974

Note: Page numbers of article titles are in boldface type

- Abrasions, treatment of, 762
Abscess, after laser surgery, 404
 in diabetic ulcer, 262-266
Absorbptive dressings, 810-811
 debridement function of, 801
Accessory bones, exostectomy in, navicular,
 605-611
 os trigonum, 617, 619-620
Acetic acid, wound healing and, 776
Achilles tendon, anatomy of, 518-519
 avulsion of, surgical approach for, 402-
 403
 dysfunction of, in calcaneal osteotomy,
 421
 lengthening of, in ankle equinus deform-
 ity, 536-538
 surgical approach for, 403-406
ossification of, surgical approach for, 402-
 403
rupture of, 766-767
 after Haglund's exostectomy, 213
 surgical approach for, 403-405
surgery on, in ankle equinus deformity
 correction, 513-542
 anatomy of, 513-520
 healing and, 531-533
 muscular activity and, 521-522
 percutaneous, 537-538
 techniques for, 533-541
 incisions for, 402-406
Achilllobursitis. See *Haglund's deformity*.
Acidic fibroblast growth factors, in wound
 healing, 939-943

- Adductor hallucis tendon release, iatrogenic
 hallux varus in, 367, 369-370
Adenosine diphosphate, in wound healing,
 730
Adenosine triphosphate production, in
 wounded tissue, 725-726, 730
Air support system, as pressure-relieving
 device, 858, 879-880
Akin bunionectomy/osteotomy, cylindrical,
 234
 minimal incision approach to, 13-23
 preoperative criteria in, 233-235
Albumin level, in diabetic ulcer healing, 265
Alginate dressings, 791, 811-812
 debridement function of, 801
Allergy, to fixation devices, 312-313
 to local anesthesia, 426
Aloe gels, in wound care, 804, 807
Alternating pressure pad, as pressure-
 relieving device, 858
Amputation, auto-, of gangrenous toe, 268
 in diabetic patient, 269-270, 847-849
Anaerobic infections, postoperative, 348
Analgesics, in postoperative joint disorders,
 257
Anaphylaxis, from anesthesia, 425-426
Anesthesia. See also specific procedure.
 choice of, 894
 complications of, 425-433
 epidural, 428-429
 general, 429-430
 in geriatric patients, 431-432
 intravenous sedation, 427-428

Anesthesia (*Continued*)

- local, 425–427
 - malignant hyperthermia, 432
 - spinal, 428
 - with tourniquets, 430–431
 - for diabetic foot surgery, 265
 - for heel spur removal, 170–171
- Angiogenesis, in wound healing, 939
- Angiopathy, in diabetes mellitus, 251, 257, 260
- Ankle, arthrodesis of, surgical approach for, 424–436
- arthroplasty of, anterior, 625–635
- arthrotomy of, surgical approach for, 429
- equinus deformity of, 513–542
 - acquired muscle contracture in, 523–524
 - anatomy of, 513–520
 - classification of, 522–524
 - clinical findings in, 527, 530–531
 - compensation in, 523
 - congenital muscle shortness in, 523
 - etiology of, 522–524
 - muscular activity in, 520–522
 - osseous, 524–525
 - pathomechanics of, 522
 - postoperative care of, 541
 - spastic, 523, 525–527
 - surgical procedures for, 533–541
 - tendon healing in, 531–533
 - uncompensated, 523
 - vs. pseudoequinus deformity, 530
- fracture of, 769–770
- lateral instability of, 579–600
 - anatomic considerations in, 579–582
 - clinical evaluation of, 582–584
 - radiography of, 582–584
 - surgical procedures for, 415–416, 584–598
 - triple ligament repair in, 596
- pseudoequinus deformity of, 530
- surgical approaches to, arthrodesis, 424–426
 - arthrotomy, 429
 - clubfoot release, 426–427
 - fibular malleolar fracture, 419–421
 - lateral collateral repair, 414–415
 - lateral stabilization, 415–416
 - medial malleolar fracture, 421–424
 - posterior malleolar fracture, 427
- Ankle brachial index, in vascular assessment, 792–793
- Ankylosing spondylitis, heel pain in, 156–157
- Anterior drawer test, in ankle instability, 582–584
- Anti-inflammatory agents, in postoperative joint disorders, 255, 257

Antibacterial effects, of electric stimulation, 836–837

Antibiotics, broad-spectrum, wound healing and, 777

- in pressure ulcer infection, 877
- in puncture wound, 794
- in trauma, 897
- postoperative, 243, 349–350
- preoperative, 244–246

Anticoagulants, bone healing and, 247

- wound healing and, 776–777

Antineoplastic agents, wound healing and, 776

Antiseptics, for pressure ulcers, 884–885

Arch, claudication of, heel pain in, 162

- reconstruction of. See also *Medial column stabilization*.
- surgical approach for, 428–429

Arthritis, in elderly persons, 820

- of subtalar joint, synovectomy-arthroplasty in, 489, 493, 496, 498
- postoperative, 254–257
- psoriatic, heel pain in, 158
- rheumatoid, heel pain in, 159–161
 - vs. spondyloarthropathy, 155–156

Arthrodesis, ankle, surgical approach for, 424–436

navicular-cuneiform, in Cole osteotomy, 637–645

- in medial column stabilization, 667, 671, 674

pantalar, 701–715

talonavicular joint, in medial column stabilization, 667

tarsal, fixation devices for, 443, 445–446

- triple. See *Triple arthrodesis*.

Arthroplasty, implant, operative correction loss in, 273–276

- in heloma durum, 224, 226
- in heloma molle, 228

of ankle, anterior, 625–635

- of metatarsal joints, complications of, 392–393
- of subtalar joint, in painful conditions, 485–500

Arthrotomy, of ankle, surgical approach for, 429

- Atherosclerosis, heel pain in, 162
 - in diabetes mellitus, 845–847

Athlete's ankle, anterior ankle arthroplasty in, 625–635

- Austin bunionectomy, preoperative criteria in, 235–236

Autoamputation, of gangrenous toe, 268

Autonomic neuropathy, in diabetes mellitus, 251–252, 257, 845

- Avascular necrosis, of talus, in triple arthrodesis, 695

- Bacitracin, in wound irrigation, 245
 Bacteria, in laser plume, 403
 in postoperative infection, 342, 347–348
 Bacterial culture, in postoperative infection, 240–241
 Bactericidal effects, of electric stimulation, 836–837
 Baker procedure, 418, 421
 in ankle equinus deformity, 535–536
 Bar, calcaneonavicular, resection of, 469–483
 Basement membrane thickening, in diabetic angiopathy, 260
 Basic fibroblast growth factors, in wound healing, 939–943
 Bassett-Baker procedure, in ankle equinus deformity, 536
 Beads, wound cleansing, 801
 Bed, specialized, in pressure ulcer management, 879–880
 Biologic dressings, 862
 Biomechanics, of diabetic foot, 847
 of heel pain, 163
 of pantalar arthrodesis, 701–702
 Biopsy, in postoperative infection, 353
 of bone, in osteomyelitis, 241
 Blisters, 789
 Blood flow, electric stimulation effects on, 836
 Blood pressure, segmental, in vascular assessment, 909–912
 Bone, biopsy of, in osteomyelitis, 241
 debridement of, 899–900
 fixation devices for. See *Fixation devices*.
 healing of, delayed union in, 248–249, 251–253
 electrical stimulation in, 923–935
 contraindications for, 933
 devices for, 932
 dose-response curve in, 931–932
 historical aspects of, 928–929
 immobilization with, 933
 indications for, 932
 methods for, 929–932
 progress monitoring in, 933
 electromagnetic stimulation in, 251–252
 failure of. See *Nonunion*.
 fixation and, 253–254, 309–310
 imaging studies of, 250
 malunion in, 248, 252–253
 nonunion in. See *Nonunion*.
 physiology of, 321–322
 primary, 923
 pseudoarthrosis in, 249–250, 252
 secondary, 923
 stages of, 246–247, 250, 923–925
 infection of. See *Osteomyelitis*.
 pegging of, in nonunion, 331
 remodeling of, fixation devices effects on, 311–312
 resorption of, in reflex sympathetic dystrophy, 290
 Bone cyst, calcaneal, bone grafting in, 456, 461
 heel pain in, 162
 Bone graft, failure of, in calcaneal osteotomy, 421
 in malunion/nonunion, 252
 in medial column stabilization, 685
 in nonunion, 331, 926–928
 in rearfoot surgery, 449–467
 autogenous, advantages/disadvantages of, 455
 clinical applications of, 456, 461
 fixation of, 453–454
 harvesting of, 454
 healing of, 449–452
 radiology of, 456
 pantalar arthrodesis, 709
 surgical considerations in, 452–456
 types of, 449, 453
 Bone paste, inadequate removal of, joint pain in, 254
 Bone plates, bone healing and, 254
 Bone scan (scintigraphy), in bone healing, 250
 in infection, 241–242
 in nonunion, 327
 in osteomyelitis, 266–267
 in reflex sympathetic dystrophy, 294–295
 Brace, in nonunion treatment, 327–328
 Bradykinin, in wound healing, 729, 736
 Broomhead approach, in malleolar fractures, 427–528
 Bunion, tailor's. See *Tailor's bunion*.
 Bunionectomy, Akin, minimal incision approach to, 13–23
 preoperative criteria in, 233–235
 Austin, preoperative criteria in, 235–236
 Hohmann, preoperative criteria in, 235–236
 iatrogenic hallux varus in, 367, 377
 implant failure after, 273–276
 in tailor's bunion, 384–386
 internal fixation in, 234–235
 McBride, minimal incision approach to, 65–67, 71–80
 operative correction loss after, 276–279, 281–284
 preoperative criteria in, 232–235
 Reverdin, preoperative criteria in, 235–236
 Reverdin-Isham procedure in, minimal incision approach to, 81–94
 Silver, preoperative criteria in, 233
 soft-tissue, complications of, 67
 goals of, 64–65
 minimal incision approach to, 63–70
 results of, 69–70

- Bunionectomy (*Continued*)
 with first metatarsal osteotomy, minimal incision approach to, 71-80
 Weinberger, 111-136
 Wilson, minimal incision approach to, 95-110
 preoperative criteria in, 235-236
 without internal fixation, 111-136
- Burns, healing of, electrical stimulation in, 837
 laser, 401
 treatment of, 762-763, 793
- Bursitis, retrocalcaneal. See *Haglund's deformity*.
- Butte procedure, in medial column stabilization, 674
- Calcaneofibular ligament, stabilization of, 596
- Calcaneonavicular bar, resection of, 469-483
- Calcaneus, apophysitis of, heel pain in, 162
 bone cyst of, bone grafting in, 456, 461
 decompression of, in heel pain, 197-202
 exostosis of, removal of, minimal incision approach to, 203-220
 fracture of, 769
 surgical approach for, 410-412
 impingement with fibula, subtalar joint synovectomy-arthroplasty in, 495
 osteotomy of, 409-423
 Baker, 418, 421
 complications of, 419, 421
 crescentic technique for, 649-651
 Dwyer, 413-414, 419
 effects of, posterior, 647-649
 errors in, 409, 423
 Evans, 418, 421
 Gleich, 414-415, 418-419, 421
 history of, 409-410
 in Haglund's deformity, 659-665
 in nonneurologic flatfoot, 655-656
 in pes cavus, 410-411, 413-415
 in pes planus, 411-412, 415-418
 in tarsal coalition, 652-655
 Koutsogiannis, 415, 421
 posterior, 647-657
 reverse Dwyer, 652
 Samilson, 415
 Selakovich, 418
 Silver, 415, 417, 421, 651-652
 surgical approach for, 428
- Calcium alginate dressings, 811-812
 debridement function of, 801
- Callous, sesamoid surgery in, 56-58
- Callus, in bone healing, 246-247, 325, 923
- Cancellous screw fixation, in rearfoot surgery, 441-442
- Capacitive coupling electromagnetic stimulation, in fracture, 931
- Capsulorrhaphy, medial, iatrogenic hallux varus in, 372
- Capsulotomy, in heloma durum, of lesser digits, 225-226
- Capsulotomy-tenotomy, of extensor hallucis longus tendon, 9-12
- Carbon dioxide laser. See *Laser surgery*.
- Carbon fiber reinforced plastic plates, in bone healing, 254
- Carcinogenesis, of fixation devices, 314-316
- Cardiac dysrhythmia, from general anesthesia, 430
- Cast, in nonunion treatment, 327-328
 total contact, 791
 for diabetic ulcer, 259-260
- Catheter infections, 345
- Causalgia, in reflex sympathetic dystrophy, 287-298
- Cavus foot (pes cavus), 410-411, 413-415
 heloma durum in, 227
 idiopathic, Cole osteotomy in, 637-645
- Celulitis, in diabetic ulcer, 262-266
 in puncture wound, 794-795
- Charcot's foot, 254-255, 847
- Cheilectomy, in hallux valgus, incomplete correction with, 279-281
- Chemotherapy, wound healing and, 776
- Chrisman-Snook procedure, modified, in lateral ankle stabilization, 596
- Chromium, in fixation devices, allergy to, 313
- Cincinnati incision, in Achilles tendon exposure, 403-405
 in clubfoot, 426
- Ciprofloxacin, in postoperative infection, 243
- Claudication, arch, heel pain in, 162
- Clawtoe, in diabetes mellitus, 251
- Closed tear injury, treatment of, 763, 765-767
- Closure, wound. See *Wound, closure of*.
- Clotting cascade, in wound healing, 728
- Clubfoot, surgical approach for, 426-427
- Coagulation disorders, wound healing in, 783
- Coalition, tarsal. See *Tarsal coalition*.
- Colchicine, wound healing and, 777
- Cold compress, wound healing retardation from, 779
- Cole osteotomy, 637-645
- Collagen, in wound healing, 737-747
 biosynthesis of, 734, 740-741
 energy metabolism and, 743-745
 in malnutrition, 781-782
 lactate in, 745-747
 regulation of, 741-743
 molecular biology of, 738-740
 structure of, 737-738
 types of, 737

- Collagen disorders, keloid formation in, 364
wound healing in, 783
- Collateral ligaments repair, lateral, surgical approach for, 414-415
- Colonna-Ralston approach, in ankle arthrodesis, 424-425
in malleolar fractures, 423
- Complement system, in wound healing, 729
- Complications, of surgery. See also specific procedure.
anesthesia-induced, 425-434
calcaneal osteotomy, 409-423
correction loss, case studies of, 273-285
from bone fixation devices, 309-320
hallux varus, 367-382
hypertrophic scars, 362-364
in geriatric patients, 431-432
infection, 341-357
keloids, 362-363
laser, 399-408
lesser metatarsal, 383-397
malignant hyperthermia, 432
nonunion, 321-339
reflex sympathetic dystrophy, 287-307
tourniquet-related, 430-431
wound dehiscence, 359-362
- Compressed bridging graft, in nonunion, 331
- Compression bandage, for bone healing promotion, 253
- Compression fixation, 435
- Computed tomography, in infection diagnosis, 242
in nonunion, 327
in osteomyelitis, 266-267
- Condylectomy, in heloma molle, of lesser digits, 227-228
- Constant direct current method, of electric stimulation, 929-930
- Corn (heloma molle), preoperative criteria in, 227-228
- Coronary disease, in elderly persons, 818-819
- Corticosteroids, bone healing and, 247
in postoperative joint disorders, 255
in reflex sympathetic dystrophy, 297-298
- Cortisone, wound healing and, 776
- Creams, for wound care, 791-792
- Crescentic calcaneal osteotomy, 649-651
- Cuboid joint, metatarsal, fusion of, bone grafting in, 461
- Culture, in postoperative infection, 240-241, 349-350, 352
- Cuneiform, osteotomy of, in Cole osteotomy, 637-645
- Current of injury, healing and, 833
- Cyclosporine, wound healing and, 777
- Cyst, bone, heel pain in, 162
calcaneal, bone grafting in, 456, 461
- Dantrolene, in malignant hyperthermia, 432
- Debridement, 822-823, 897
dressing role in, 800-801
electrical stimulation in, 837
in postoperative infection, 244
of diabetic ulcer, 263
of pressure sores, 788, 882
surgical, 800
tissue viability assessment in, 898-902
- Decompression, calcaneal, in heel pain, 197-202
- Decortication, of nonunion, 926
- Dehiscence, wound, 359-362
treatment of, 823-824
- Delayed union. See also *Nonunion*.
after lesser metatarsal surgery, 389-390
in bone healing, 248-249, 251-253
- Dermapulse treatment, of ulcers, 830-831
- Dermatitis, from metallic fixation devices, 312-313
- Dessication, wound healing retardation from, 779
- Dexamethasone, collagen synthesis and, 744
in postoperative joint disorders, 255
- Diabetes mellitus, anesthesia complications in, 429
autonomic neuropathy in, 845
bone healing in, 247
heel pain in, 162
in elderly persons, 820
peripheral neuropathy in, 843
peripheral vascular disease in, 845-847
sensory motor neuropathy in, 843-845
ulcers in. See *Diabetic foot, ulcers in*.
wound healing in, 780-781
growth factors and, 948-949
- Diabetic foot, 249-272
biomechanics of, 847
corrective shoes for, 255-256
morbidity from, 249
self-care in, 250
team approach to, 249-250, 265
ulcers in, 843-855
amputation in, 847-849
classification of, 250, 849-851
grade 0 (no open lesion), 250-257
grade 1 (superficial ulcer), 250, 257-262
grade 2 (deep ulcer), 250, 262-266
grade 3 (osteomyelitis), 250, 266-268
grade 4 (forefoot gangrene), 250, 268-269
grade 5 (total gangrene), 250, 269-270
infection in, 851
ischemic, 849
locations of, 849
neurotrophic, 849
pathophysiology of, 843-847
patient education in, 852-853

- Diabetic foot (Continued)**
 treatment of, 824, 849–853
- Diaphysectomy, in heloma durum, 225**
- Diazepam, in reflex sympathetic dystrophy, 297, 300–301**
- Diffuse idiopathic skeletal hyperostosis, heel pain in, 158**
- Digits. See Toe(s).**
- DISH (diffuse idiopathic skeletal hyperostosis), heel pain in, 158**
- Dislocations, management of, 767–768**
- Doppler velocimeter, in vascular assessment, 916**
- Doppler wave analysis, in diabetic foot evaluation, 258**
- Dorsiflexion deformity, of hallux, tenotomy-capsulotomy in, 9–12**
- Drainage, of postoperative infection, 347–348, 351–352**
- Dressings, 799–816, 823**
 absorptive, 790, 801, 810–811
 alginic, 791, 801, 811–812
 biologic, 862
 cleansing procedures and, 800–801
 criteria for, 803
 debridement function of, 800–801
 films, 801, 807
 for bone healing promotion, 253
 for pressure ulcers, 859–864, 885–886
 future trends in, 812–814
 gels, 804, 807
 historical aspects of, 799, 802–804
 hydrocolloid, 789–790, 810, 859, 862
 irrigation procedures and, 800–801
 lubricating sprays as, 804, 807
 occlusive, 789–791
 debridement function of, 801
 for pressure ulcers, 885–886
 occlusive wafer, 807–809
 polyurethane film, 789, 862
 polyurethane foam, 812
 precautions with, 862–864
 purpose of, 789
 selection of, 812
 algorithm for, 803
 semi-rigid, 791
 wet, 791
 wet-to-damp, 804
 wet-to-dry, debridement function of, 801
 wound cleansing beads, debridement function of, 801
- Drugs, wound healing and, 775–777**
- Dwyer calcaneal osteotomy, reverse, 652**
- Dwyer medial approach, 412–413**
- Dwyer procedure, 413–414, 419**
- Dystrophic changes, in reflex sympathetic dystrophy, 290**
- Eczema, from metallic fixation devices, 312–313**
- Edema, in burns, 762–763**
 in closed tear injury, 765
 management of, electrical stimulation in, 837
 mechanisms of, in wounded tissue, 731
 prevention of, joint disorders and, 256
 wound healing and, 779, 822
- Ehlers-Danlos syndrome, wound healing in, 783**
- Elderly persons, anesthesia complications in, 431–432**
 wound healing in, 782–783, 817–826
 factors affecting, 817–822
 foot problem epidemiology and, 817
 in deep infection, 824
 in dehiscence, 823–824
 in diabetic ulcers, 824
 in pressure sores, 824
 in venous ulcers, 824
 management principles for, 822–823
- Electrical stimulation, in bone healing, 328–330, 923–935**
 contraindications for, 933
 devices for, 932
 dose-response curve in, 931–932
 historical aspects of, 928–929
 immobilization with, 933
 indications for, 932
 methods for, 929–932
 progress monitoring in, 933
 in wound healing, 827–841
 animal studies of, 832–833
 antibacterial effects in, 836–837
 biologic effects of, 833–838
 blood flow increase in, 836
 cell stimulation in, 835–836
 current of injury in, 833
 debridement function of, 837
 edema reduction in, 837
 efficacy of, 828–833
 galvanotaxis effects in, 835
 hemostatic effects in, 837
 historical perspective of, 827–828
 negative polarity effects in, 837–838
 positive polarity effects in, 837–838
 pressure ulcers, 864–865
 of nerves, in reflex sympathetic dystrophy, 296
- Electrodiagnosis, in tarsal tunnel syndrome, 504–505**
- Electromagnetic bone healing, 251–252**
- Elephant foot pseudarthrosis, 249**
- Elmslie procedure, in lateral ankle stabilization, 594, 596**
- Energy metabolism, collagen synthesis and, 743–745**
- Enthesopathy, heel pain and, 155–156**
- Epidermal growth factor, in wound healing, 745–747, 944–947**

- Epidural anesthesia, complications of, 428–429
- Epinephrine, in anesthesia reaction, 426–427
- Equinus deformity, ankle. See under *Ankle*.
- Erythrocyte sedimentation rate, in postoperative infection, 346
- Essex-Lopresti classification, of calcaneal fractures, 769
- Estrogens, wound healing and, 777
- Evans procedure, 418, 421
in lateral ankle stabilization, 584–585
- Exostectomy, Haglund's, minimal incision approach to, 203–220
of rearfoot, in os trigonum syndrome, 617, 619–620
- Exostosis, of rearfoot, 601–623
accessory navicular bone, 605–611
causes of, 601–602
conservative treatment of, 604, 609, 615, 620
diagnosis of, 602–604, 609, 614, 619–620
Haglund's deformity, 611–617
surgical treatment of, 604–605, 609, 611, 615, 617, 620
- Extensor hallucis longus tendon, tenotomy–capsulotomy of, 9–12
tenotomy of, in spoon-toe deformity, 1–8
- External fixation, in rearfoot surgery, 442–443
vs. nonfixation, 253–254
- Factitious wounds, diagnosis of, 780
- Fasciotomy, in heel spur syndrome, 165
- Felted-Foam, for diabetic ulcer, 258–259
- Femoral-popliteal-tibial reconstruction, for diabetic foot, 261–262
- Fever, in postoperative infection, 344–345
- Fibrin, in wound healing, 728
- Fibrinolysis, in wound healing, 729
- Fibroblast(s), in wound healing, 733–736, 742
electric stimulation of, 835–836
- Fibroblast growth factors, in wound healing, 939–943
- Fibrogenesis, regulation of, lactate in, 745–757
- Fibronectin, in wound healing, 735–736
- Fibrogenesis, regulation of, lactate in, 745–757
- Fibronectin, in wound healing, 735–736
- Fibula, impingement with calcaneus, subtalar joint synovectomy-arthroplasty in, 495
- malleolar fracture of, surgical approach for, 419–421
- Fibular sesamoideectomy, iatrogenic hallux varus in, 370
- Film dressings, 807, 859, 862
debridement function of, 801
- Fixation devices, 309–320
allergy to, 312–313
bone healing and, 309–310
bone remodeling and, 311–312
corrosion of, 312
displacement of, 391–392
in medial column stabilization, 685, 688
in nonunion, 330–331, 335
in rearfoot surgery, 433–447
external, 442–443
factors affecting, 433–434
for bone graft, 453–454
goals of, 434–435
Kirschner wires in, 435–436
osteotomy, 443
postoperative control of, 446
screws in, 440–442
stainless steel wire in, 440
staples in, 436–440
Steinmann pins in, 435–436
tarsal arthrodesis, 443, 445–446
in triple arthrodesis, 694–695
- infection from, 316
- malignancy induced by, 314–316
- migration of, 314
- osteoporosis from, 310–311
- removal of, 316
- stress produced by, 311
- Flatfoot deformity (pes planus), 411–412, 415–418
- correction of. See also *Medial column stabilization*.
posterior calcaneal osteotomy in, 647–657
- flexible, radiography of, 675
symptoms of, 675
- Flexor digitorum longus tendon transfer, in tibial tendon dysfunction, 548–551
- Flexor hallucis brevis tendon release, iatrogenic hallux varus in, 367, 369–370
- Floating toe, in lesser metatarsal surgery, 393
- Fluid support system, as pressure-relieving device, 858, 879
- Fluroscan, in minimal incision surgery, 219
- Fluoroscopy, in bone healing diagnosis, 250
in closing base wedge osteotomy, minimal incision approach and, 137–151
in nonunion, 325
- Footballer's ankle, anterior ankle arthroplasty in, 625–635
- Foreign body, fixation device as, malignancy and, 314–316
in diabetic ulcer, 263
removal of, 760–761, 794
wound healing retardation from, 779

- Forestier's disease, heel pain in, 158
 Fractures, bone healing in. See *Bone, healing of.*
 calcaneal, surgical approach for, 410–412
 fixation devices for. See *Fixation devices.*
 heel pain in, 162
 malleolar, surgical approaches for, 419–424, 427
 nonunion of. See *Nonunion.*
 open, treatment of, 902
 treatment of, 768–770. See also *Electrical stimulation, in bone healing.*
- Fulp-McGlamry technique, in ankle equinus deformity correction, 538–541
- Fungal infections, in pressure ulcers, 885
 postoperative, 348
- Fusion, of metatarsal cuboid joint, bone grafting in, 461
- Gaenslen approach, in calcaneal fracture, 411–412
- Gallium 67 scan, in infection diagnosis, 241–242
- Galvanotoxic effect, in healing, 835
- Gangrene, in diabetic foot, 268–270, 851
- Gastrocnemius aponeurosis, distal recession of, in ankle equinus deformity, 534–535
 lengthening of, in ankle equinus deformity, 533, 535–536, 538–541
- Gastrocnemius muscle, anatomy of, 513, 515
 function of, 520–522
- Gateillier-Chastang approach, in ankle stabilization, 415–416
- Gels, in wound care, 804, 807
- General anesthesia, complications of, 429–430
- Genetic disorders, wound healing in, 783
- Geriatric patients. See *Elderly persons.*
- Gleich procedure, 414–415, 418–419, 421
- Glucocorticoids, wound healing and, 776
- Glycolysis, collagen synthesis and, 743–744
- Gout, heel pain in, 162
- Granulocytes, in inflammatory response, 731–732
- Grice approach, in sinus tarsi exposure, 416
- Growth factors, in fibrogenesis, 745–757
 in wound healing, 937–953
 angiogenesis and, 939
 epidermal growth factor, 745–747, 944–947
 fibroblast growth factors, 939–943
 mechanism of action of, 938–939
 normal, 937–939
 platelet-derived growth factor, 947–949
 platelet-derived wound healing formula in, 949–951
 pressure ulcers, 865
 production of, 938
- transforming growth factors, 735, 742, 943–944
 types of, 939
- Guanethidine, in reflex sympathetic dystrophy, 297–298
- Gunshot injury, treatment of, 904–905
- Haglund's deformity, anatomic considerations in, 662
 conservative treatment of, 615, 662–663
 diagnosis of, 614
 etiology of, 659–660
 radiography of, 660–661
 surgical treatment of, exostectomy, 611–617
 historical aspects of, 661–662
 incisions for, 406–408
 postoperative management of, 664
 technique for, 663–664
- Haglund's exostectomy, minimal incision approach to, 203–220
- Hallux, callous on, sesamoid surgery in, 56–58
- dorsiflexion deformity of, tenotomy-capsulotomy in, 9–12
- heloma durum of, preoperative criteria in, 227
- heloma molle of, preoperative criteria in, 228
- osteotomy of, minimal incision approach to, 13–23
- Hallux abducto valgus deformity, angular relationships in, 64, 82–83, 231–232
 bunionectomy in. See *Bunionectomy.*
 classification of, 82–84
 combined, 231
 definition of, 81
 etiology of, 82
 osteotomy in, minimal incision approach to, 13–23
 positional, 231
 preoperative criteria in, 230–236
 structural, 231
- Hallux abductus interphalangeus,
 overcorrection of, iatrogenic hallux varus in, 371–372
- Hallux adductus. See *Hallux varus.*
- Hallux interphalangeal joint extensus, tenotomy for, 1–8
 case studies in, 3–5
 procedure for, 1–3
- Hallux rigidus, preoperative criteria in, 232
- Hallux valgus, surgery for, implant failure after, 273–276
 operative correction loss after, 276–279, 281–284
- Hallux varus, iatrogenic, 367–382
 causes of, 370–372

- clinical findings in, 372, 374
 dynamic, 367, 369
 incidence of, 367
 radiography of, 374, 376
 static (nondynamic), 367
 surgical repair of, 376-381
 types of, 367, 369-370
- Halothane hepatitis,** 430
- Hammertoe,** heloma durum in, 225-226
 in diabetes mellitus, 251
- Hardware.** See *Fixation devices*.
- Headache,** after spinal anesthesia, 428
- Healing,** of bone. See under *Bone*.
 of bone graft, in rearfoot surgery, 449-452, 456
 of tendons, 531-533
 of wound. See *Wound healing*.
- Heart disease,** in elderly persons, 818-819
- Heat therapy,** in reflex sympathetic dystrophy, 296
- Heel pain,** 167-185
 anatomic considerations in, 187-188
 biomechanical factors in, 163
 causes of, 161-163
 clinical findings in, 168-169, 190
 differential diagnosis of, 153-166, 167
 in ankylosing spondylitis, 156-157
 in osteoarthritis, 161
 in psoriatic arthritis, 158
 in Reiter's syndrome, 157
 in rheumatoid arthritis, 159-161
 pathomechanics of, 188-190
 radiographic findings in, 169
 recalciitrant, surgical management of, 187-195
 systemic problems and, 154-156
 treatment of, 163-165
 calcaneal decompression in, 197-202
 conservative, 169-170, 190
 surgical, in recalciitrant disease, 187-195
 minimal incision approach to, 170-183, 190-193
- Heel spur,** anatomic considerations in, 187-188
 location of, 172
- Heel spur syndrome,** 153-154
 causes of, 162-163
 treatment of, 163-165
- Heloma durum,** preoperative criteria in,
 double, 226
 of fifth digit, 224-225
 of hallux, 227
 of lesser digits, 225-226
- Heloma molle,** preoperative criteria in, 227-228
- Hematoma,** in laceration, 763
 in postoperative infection, 346-347
 prevention of, joint disorders and, 256
 wound healing retardation in, 778-779
- Hemoglobin,** in oxygen transport, in wound environment, 724-725
- Hemophilia,** wound healing in, 783
- Hemorrhage,** in laser surgery, 401
- Hemostasis,** electrical stimulation in, 837
 in acute trauma, 757-758
 in wound healing, 730
- Heparin,** wound healing and, 776-777
- Hepatitis,** halothane, 430
- Herbert screws,** 314
- Histamine,** in wound healing, 729
- Hohmann bunionectomy,** preoperative criteria in, 235-236
- Hoke procedure,** in medial column stabilization, 671, 674
- Horse foot pseudarthrosis,** 249
- Hyaluronic acid,** in wound healing, 734-735
- Hyaluronidase,** in wound healing, 735
- Hydrocolloid dressings,** 789-790, 810, 859, 862
- Hydrogen peroxide,** wound healing and, 776
- Hydrotherapy,** in wound cleansing, 801
 postoperative, in infection, 244
 in joint disorders, 255
- Hyperbaric oxygen therapy,** 792
 in diabetic ulcer, 852
- Hyperglycemia,** angiopathy and, 260
 neuropathy and, 253-254
 wound healing in, 781
- Hyperkeratosis,** after lesser metatarsal surgery, 386, 389
- Hyperpyrexia,** 432
- Hypersensitivity reaction,** from metallic fixation devices, 312-313
- Hypertension,** in general anesthesia, 429-430
- Hyperthermia,** malignant, 432
- Hypertrrophic scars,** postoperative, 362-364
- Hypoproteinemia,** wound healing and, 781-782
- Hypotension,** in anesthesia, general, 429
 spinal, 428
- Hypothermia,** in general anesthesia, 430
- Hypovolemia,** wound healing in, 783-784
- Ilizarov technique,** in nonunion, 331, 335
- Imaging studies,** in bone healing diagnosis, 250
- Immobilization,** in bone healing disorders, 251, 926
- Immunodeficiency,** wound healing in, 780
- Immunosuppressive agents,** wound healing and, 777
- Implant(s).** See also *Fixation devices*.
 in subtalar joint, synovectomy-arthroplasty in, 495
- Implant arthroplasty,** operative correction loss in, 273-276

- Incisions, in Achilles ossification, 402–403
 in Achilles tendon avulsion, 402–403
 in Achilles tendon lengthening, 405–406
 in Achilles tendon rupture, 403–405
 in ankle arthrodesis, 424–426
 in ankle arthrotomy, 429
 in arch reconstruction, 428–429
 in calcaneal fracture, 410–412
 in calcaneal osteotomy, 428
 in clubfoot correction, 426–427
 in Haglund's deformity resection, 406–408
 in heel spur surgery, 409–410
 in lateral ankle stabilization, 415–416
 in lateral collateral ligament repair, 414–415
 in malleolar fractures, fibular, 419–421
 medial, 421–424
 posterior, 427
 in os trigonum access, 408–409
 in peroneal subluxation repair, 414
 in sinus tarsi exposure, 416–417
 in subtalar joint fusion, 416–417
 in sural neurolysis, 412
 in tarsal coalition resection, 419
 in tarsal tunnel release, 412–413
 in tibial tendon exposure, 413–414
 in triple arthrodesis, 418
 principles of, 401–402
- Incontinence, urinary, pressure ulcer management and, 881
- Indium 111 scan, in infection diagnosis, 242
- Inductive coupling electromagnetic stimulation, in fracture, 930
- Infection, deep, treatment of, 824
 heel pain in, 162
 in elderly persons, 820
 in minimal incision surgery, 239–246
 antibiotics in, 243–245
 clinical recognition of, 239–240
 laboratory findings in, 240–241
 management of, 242–244
 nuclear medicine scans in, 241–242
 prevention of, 245–246
 radiography of, 240
 of diabetic ulcer, 262–268, 851–852
 of pressure ulcer, 876–877
 postoperative, 341–357
 biopsy in, 353
 consultation in, 350–351
 culture in, 349–350, 352
 drainage of, 347–348, 351–352
 fever in, 344–345
 from fixation devices, 316
 healing after, 353
 hematoma in, 346–347
 hospitalization in, 348–349
 in calcaneal osteotomy, 419, 421
 in dehiscence, 361
 in elective surgery, 354
 in laser surgery, 402–403
 in nonunion, 335–337
 laboratory assessment in, 345–346, 349–350, 352–353
 pain in, 342–343
 persistence of, 353–354
 seroma in, 346–347
 vs. inflammation, 343–344
 wound closure in, 352
 wound inspection in, 342
 wound healing and, 778, 822
- Inflammation, in healing, 360
 acute phase of, 730–733
 mediators of, 728–730
 vs. infection, 343–344
- Inflammatory bowel syndrome, heel pain in, 158
- Injection wound, treatment of, 761–762
- Instruments, use of, complications and, 256
- Insulin, in wound healing, 948–949
- Insulin-like growth factor-1, in wound healing, 948–949
- Intermetatarsal angle, negative, iatrogenic hallux varus in, 371
- Internal fixation, devices for. See *Fixation devices*.
 in bone healing disorders, 252
 in bunionectomy, 234–235
 vs. nonfixation, 253–254
- Interphalangeal joint, first, subluxation of, heloma durum in, 227
 tenotomy of, in spoon-toe deformity, 1–8
- Intravenous sedation, complications of, 427–428
- Iodophors, wound healing and, 776
- Iontophoresis, in postoperative joint disorders, 255
- Irrigation, in postoperative infection, 244–245
 in wound cleansing, 801–802, 897
- Isotope clearance studies, in vascular assessment, 917–918
- Jack procedure, in medial column stabilization, 674
- Jacobs-Oloff procedure, in medial column stabilization, 674
- Jacoby heel compression splint, 177
- Jergesen approach, in malleolar fractures, 419–423
- Joint problems, postoperative, 254–257
- Jones fracture, 768–769
- Kantrex, in wound irrigation, 245
- Keck-Kelly procedure, 414
 in Haglund's deformity, 661–662

- Keloids, postoperative, 362-363
Keratoderma blennorrhagia, in Reiter's syndrome, 157
Keratosis. See also *Heloma durum*; *Heloma molle*; *Plantar keratosis*.
after lesser metatarsal surgery, 386, 389
Kirschner wires, in lesser metatarsal surgery, 391
in osteotomy fixation, 253
in rearfoot surgery, 435-436
migration of, 314
Kocher approach, to subtalar joint, 417-418
Kocher J type incision, in peroneal tendon exposure, 414
Koutsogiannis procedure, 415, 421
- Laboratory tests, in acute trauma, 759, 896
preoperative, 894
Lacerations, treatment of, 763
Lactate, in collagen synthesis, 743-747
in wound environment, 727
Laser Doppler velocitometer, in vascular assessment, 916
Laser surgery, 399-408
advantages of, 399
complications of, 401-406
hemorrhage in, 401
improper wound depth in, 401-402
in keloid removal, 364-365
in matrixectomy, 405
in neuroma, 406
in onychomycosis, 405
in osteotomy, 406
in porokeratosis, 405
in verruca, 404-405
infection in, 402-403
physics of, 399-400
plume from, 400, 403-404
postoperative discomfort from, 402
risks to medical personnel from, 400, 403-404
scar formation in, 402
Lavage, in postoperative infection, 244-245
in prevention of postoperative joint disorders, 256
Lee procedure, modified, in lateral ankle stabilization, 585-594
Leukotrienes, in wound healing, 729-730
Ligament, tear injury of, 763, 765
Lister's corn (*heloma molle*), preoperative criteria in, 227-228
Lixiscope, in minimal incision surgery, 218-219
Lotions, for wound care, 791
Lowman procedure, in medial column stabilization, 667
Lubricating sprays, in wound care, 804, 807
- Lymphadenopathy, in postoperative infection, 348
Lymphocytes, in inflammatory response, 732
in postoperative infection, 345-346
- McBride bunionectomy, iatrogenic hallux varus in, 367, 377
minimal incision approach to, 65-67, 71-80
McElvenny-Caldwell procedure, in medial column stabilization, 674
McGlamry approach, in arch reconstruction, 428-429
McGlamry Z-plasty technique, in ankle equinus deformity, 536
McLaughlin-Ryder approach, in malleolar fractures, 419
Macrophages, in inflammatory response, 732-733
Magnetic resonance imaging, in bone healing, 250
in infection, 242
Malignancy, from fixation devices, 314-316
wound healing in, 783
Malignant hyperthermia, 432
Malleolar fractures, surgical approach for, fibular, 419-421
medial, 421-424
posterior, 427
Mallet toe deformity, *heloma durum* in, 226
Malnutrition, in elderly persons, 820-821
Malunion, after lesser metatarsal surgery, 390
in bone healing, 248, 252-253
Massage, in reflex sympathetic dystrophy, 296
Matrix regeneration phase, of wound healing, collagen in, 737-747
fibroblasts in, 733-736
Matrixectomy, with laser, 405
Mattress, as pressure-relieving device, 858, 879
Medial capsulorrhaphy, iatrogenic hallux varus in, 372
Medial column stabilization, 667-692
arthrodesis and, 690
historical perspective of, 667, 671, 674
indications for, 675, 678
postoperative management of, 688, 690
procedures related to, 690
surgical technique for, 678-688
Metal implants, allergy to, 312-313
carcinogenesis by, 314-316
Metatarsal(s), cuboid joint of, fusion of, bone grafting in, 461
deformity of, in hallux valgus surgery, 276-279

- Metatarsal(s) (Continued)**
- head of, excessive resection of, iatrogenic
 - hallux varus in, 370–371
 - round, iatrogenic hallux varus in, 372
 - osteomyelitis of, 267
 - shaft of, osteotomy of, iatrogenic hallux varus in, 367
- Metatarsal(s) (fifth), bunion of.** See *Taylor's bunion*.
- osteotomy of, minimal incision approach to, 32–35
- Metatarsal(s) (first), ostectomy of, with bunionectomy, minimal incision approach to, 71–80**
- osteotomy of, closing base wedge, minimal incision approach to, 137–151
 - in hallux abducto valgus, minimal incision approach to, 81–94
 - without internal fixation, 111–136
- preoperative criteria in, 235–236
- Metatarsal(s) (lesser), deformities of, plantar keratosis in, preoperative criteria in, 228–230**
- osteotomy of, in plantar keratosis, 230
 - minimal incision approach to, 25–39
 - surgery of, complications of, 383–397
 - delayed union, 389–390
 - digital deformity, 392–393
 - fixation device displacement, 391–392
 - historical perspective of, 383–384
 - intraoperative, 385–386
 - malunion, 390
 - nonunion, 389–390
 - postoperative, 386, 389–393
 - recurrent lesions, 386, 389
 - transfer lesions, 386, 389
 - incisions for, 385
- Metatarsalgia, lesser metatarsal osteotomy in, minimal incision approach to, 25–39**
- Metatarsal(s), fracture of, 768–769**
- Metatarsophalangeal joints, arthroplasty of, complications of, 392–393**
- Metatarsus elevatus, after hallux valgus correction, 276–279**
- implant failure from, 273–276
 - in hallux valgus, 279–281
- Metatarsus primus adductus, closing base wedge osteotomy in, minimal incision approach to, 137–151**
- Midtarsal joint, dislocation of, 767–768**
- Migration, of fixation devices, 314**
- Miller procedure, for medial column stabilization, 667, 671, 674**
- Minimal incision surgery, bunionectomy, Akin, 13–23**
- Reverdin-Isham, 81–94
 - soft-tissue, 63–70
 - with first metatarsal ostectomy, 71–80
 - Wilson, 95–110
- without internal fixation, 111–136
 - complications in, 239–260
 - abnormal bone healing, 246–254
 - infection, 239–246
 - joint pain/stiffness, 254–257
 - criteria for, 221–237
 - in heel pain, calcaneal decompression, 197–202
 - Haglund's exostectomy, 203–220
 - spur removal, 167–185, 187–195
 - in sesamoid pathology, 41–47, 49–61
 - osteotomy, closing base wedge, 137–151
 - of hallux, 13–23
 - of lesser metatarsals, 25–39
 - preoperative examination in, 221–237
 - tenotomy, for hallux interphalangeal joint extensus, 1–8
 - tenotomy-capsulotomy, for hallux dorsiflexion deformity, 9–12
- Molybdenum, in fixation devices, allergy to, 313**
- Monocytes, in inflammatory response, 732–733**
- Motor function abnormality, in reflex sympathetic dystrophy, 290**
- Muscle(s), imbalance of, iatrogenic hallux varus in, 367, 369–370**
- tear injury of, 763
- Muscle flap reconstruction, in osteomyelitis surgery, 267**
- Musculoskeletal disease, in elderly persons, 819–820**
- Musculoskeletal examination, in acute trauma, 759**
- Navicular accessory bone, exostectomy of, 605–611**
- Navicular-cuneiform arthrodesis, in Cole osteotomy, 637–645**
- in medial column stabilization, 667, 671, 674
- Needle test, in Achilles tendon rupture, 767**
- Nerve(s), disorders of, in reflex sympathetic dystrophy, 292–293**
- injury of, repair of, 900
- Nerve block, in reflex sympathetic dystrophy, 295–297, 300–303**
- Nerve cells, electric stimulation of, healing and, 836**
- Neuroarthropathy, in diabetic foot, 254–255**
- Neurologic examination, in acute trauma, 759**
- Neuroma, laser surgery on, 406**
- Neuropathy, in diabetes mellitus, 843–847**
- autonomic, 251–252, 257
 - peripheral, 251–255
- Neutrophils, in inflammatory response, 732**
- in postoperative infection, 345–346

- Nickel, in fixation devices, allergy to, 312–313
carcinogenesis of, 315
- Nonsteroidal anti-inflammatory drugs, in postoperative joint disorders, 255
wound healing and, 777
- Nonunion, 321–339, 925–928
after lesser metatarsal surgery, 389–390
atrophic, 324
treatment of, 331
avascular, 322–324
causes of, 321–322
classification of, 322–324
comminuted, 323
defect, 323–324
diagnosis of, 324–327
elephant foot, 322
horse's hoof, 322
hypervascular, 322
in bone healing, 249, 251–253
in triple arthrodesis, 695
oligotrophic, 322
torsion wedge, 323
treatment of, infected, 335–337
nonsurgical, 327–330
surgical, 330–337
vs. pseudarthrosis, 324
- Nutritional status, wound healing and, 781–782, 820–821
in pressure ulcer, 880–881
- Nylidrin, in reflex sympathetic dystrophy, 297
- Ober approach, in posterior tibial tendon exposure, 413–414
- Occlusive dressings, 789–791
for pressure ulcers, 885–886
- Occlusive wafer dressings, 807–809
debridement function of, 801
- Occupational risks, of laser surgery, 400, 403–404
- Ointments, for wound care, 792
- Oligotrophic pseudarthrosis, 249
- Ollier's incision, in subtalar joint exposure, 416–417
in tarsal coalition resection, 419
in triple arthrodesis, 418
- Onychocryptosis, laser surgery in, 405
- Onychomycosis, laser surgery in, 405
- Open fractures, treatment of, 902
- Operative correction, inappropriate, in calcaneal osteotomy, 419, 421
loss of, case studies of, 273–285
in calcaneal osteotomy, 421
in cheilectomy, 279–281
in hallux valgus surgery, 276–279, 281–284
in toe implant fracture, 273–276
- Orthosis, in postoperative joint disorders, 255
- Os trigonum, exostectomy in, 617, 619–620
surgical approach for, 408–409
- Osseous equinus deformity, of ankle, 524–525
- Osteotomy, of first metatarsal, with bunionectomy, minimal incision approach to, 71–80
- Osteitis, in heel pain, 156
- Osteoarthritis, after calcaneal osteotomy, 421
heel pain in, 161
- Osteoid osteoma, heel pain in, 162
- Osteomyelitis, in diabetic foot, 250, 266–267, 851–852
in nonunion, treatment of, 335–337
in pressure ulcer, 877–878
in puncture wound, 794–795
postoperative, 241–243
- Osteoporosis, from fixation devices, 310–311
in elderly persons, 819–820
in reflex sympathetic dystrophy, 303, 305
- Osteotomy, Akin, minimal incision approach to, 13–23
preoperative criteria in, 233–235
angle overcorrection in, iatrogenic hallux varus in, 371
Baker, 418, 421
bone healing in. See *Bone, healing of*.
calcaneal. See under *Calcaneus*.
closing wedge, in hallux valgus, errors in, 276–279
of first metatarsal, minimal incision approach to, 137–151
Cole, 637–645
Dwyer, 413–414, 419
Evans, 418, 421
fixation of, 253–254
Gleich, 414–415, 418–419, 421
iatrogenic hallux varus in, 367
Keck and Kelly, 414
Koutsogiannis, 415, 421
lasers in, 406
metatarsal. See under *Metatarsal(s)*.
nonfixed, 254
of hallux, minimal incision approach to, 13–23
of lesser metatarsals. See *Metatarsal(s), (lesser), surgery of*.
Pazoni, 414
phalangeal, in heloma durum/molle, 225, 227–228
rearfoot, fixation devices for, 443
Samilon, 415
Selakovich, 418
Silver, 415, 417, 421
transcuboidal, in Cole osteotomy, 637–645
- Osteotripsy, in heloma molle, 227–228

- Oxygen, in wound healing, 821–822
 Oxygen delivery, in wound environment, 724–727
 Oxygen pressure, of wound environment, 726–727, 792–793
 transcutaneous, in diabetic foot evaluation, 258
 in vascular assessment, 916–917
 Oxygen therapy, hyperbaric, 792
 in diabetic ulcer, 852
- Padding, for diabetic ulcer, 258–259
 Paget's disease, heel pain in, 162
 Pain, in reflex sympathetic dystrophy. See *Reflex sympathetic dystrophy*.
 postoperative, causes of, 342–343
 in laser surgery, 402
 Pannike technique, of bone grafting, 331
 Pantalar arthrodesis, 701–715
 biomechanical considerations in, 701–702
 complications of, 712, 714
 goals of, 702
 indications for, 702
 preoperative considerations in, 702
 surgical procedure for, 703–712
 Papillomavirus, in laser plume, 403–404
 Paratenon, characteristics of, 532–533
 Pazoni osteotomy, 414
 Pegging, bone, in nonunion, 331
 Penicillamine, wound healing and, 777
 Percutaneous surgery. See *Minimal incision surgery*.
 Perfusion scanning, in vascular assessment, 918
 Peripheral neuropathy, in diabetes mellitus, 251–255, 843
 Peripheral vascular disease, in diabetes mellitus, 845–847
 in elderly persons, 819
 vascular assessment in. See *Vascular status, assessment of*.
 wound healing and, 781
 Peroneal tendon, in lateral ankle stabilization, 584–587, 596
 subluxation of, surgical repair of, 414, 555–577
 Personality profile, in reflex sympathetic dystrophy, 290–291
 Pes cavus. See *Cavus foot*.
 Pes planus, 411–412, 415–418
 Phagocytosis, in wound healing, 729
 Phalangeal base, proximal, intrinsic imbalance of, iatrogenic hallux varus in, 371–372
 Phalangeal osteotomy, in heloma durum/molle, 225, 227–228
 Phenoxylbenzamine, in reflex sympathetic dystrophy, 297
- Phlebitis, from catheterization, 345
 Photocoagulation, in laser surgery, 401
 Photoplethysmography, in vascular assessment, 913
 Physical therapy, in postoperative joint disorders, 257
 in reflex sympathetic dystrophy, 296, 300–302
 Pin fixation, in rearfoot surgery, 435–436
 Pinch callous, sesamoid surgery in, 56–58
 Plantar fascia, heel spur formation and, 163
 tear of, management of, 765–766
 Plantar keratosis, extensor hallucis longus tenotomy in, 3
 intractable, in lesser metatarsal deformities, preoperative criteria in, 228–230
 in sesamoid disorders, 52–56, 58
 lesser metatarsal osteotomy in, minimal incision approach to, 25–39
 sesamoid planing in, minimal incision approach to, 41–47
 Plantaris muscle, anatomy of, 515
 Plantaris tendon, anatomy of, 515, 518
 Plasma, transudation of, in wounded tissue, 731
 Plasmin, in wound healing, 729
 Plasminogen, in wound healing, 729
 Platelet(s), aggregation of, in wound healing, 730
 Platelet-derived formula, in wound healing, 949–951
 Platelet-derived growth factor, wound healing, 947–949
 Plethysmography, in vascular assessment, 912
 Polymorphonucleocyte, in inflammatory response, 732
 Polyurethane film dressings, 789, 807, 859, 862
 Polyurethane foam, as dressing, 812
 as pressure-relieving device, 858
 Porokeratosis, laser surgery in, 405
 Prednisone, in reflex sympathetic dystrophy, 297–298
 Preoperative criteria, 221–237
 age considerations in, 223
 examination in, 221–224
 for bunionectomy, 232–235
 for digital deformity correction, 224–228
 for hallux abducto valgus deformity, 230–236
 for hallux rigidus, 232
 for heloma durum, of fifth digit, 224–225
 of hallux, 227
 of second, third, and fourth digits, 225–226
 for heloma molle, 227–228
 for intractable plantar keratosis, 228–230
 lifestyle considerations in, 223
 Preoperative examination, 221–224

- Pressure callous, sesamoid surgery in, 56-58
- Pressure-relieving devices, in ulcer management, 858, 878-879
- Pressure sores/ulcers, assessment of, 872-876
- causes of, 788
 - classification of, 788-789
 - diagnosis of, 870-871
 - etiology of, 870-871
 - infection of, 876-877
 - osteomyelitis in, 877-878
 - pathogenesis of, 870-871
 - prevalence of, 869
 - prevention of, 871-872
 - risk factors for, 869-870
 - treatment of, 788-789, 824, 857-867, 869-890
 - antiseptic cleansers in, 883-884
 - dressings in. *See Dressings.*
 - electrical stimulation in, 864-865
 - future trends in, 864
 - growth factors in, 865
 - in urinary incontinence, 881
 - local aspects of, 882
 - modalities for, 857-858
 - nutritional support in, 880-881
 - pressure-relieving devices in, 858, 878-879
 - specialty beds in, 879-880
 - supportive, 880-881
 - surgical, 882-883
 - topical agents for, 883-884
- Procuren (platelet-derived wound healing formula), 949-951
- Progesterone, wound healing and, 777
- Projectile injury, treatment of, 904-905
- Prolyl hydroxylase, in wound healing, 741-744
- Proprioceptive defect, after ankle injury, synovectomy-arthroplasty in, 493-495
- Prostaglandins, in wound healing, 729
- Protein calorie malnutrition, in elderly persons, 820-821
- Proximal articular set angle, negative, iatrogenic hallux varus in, 371
- Pseudarthrosis. *See also Nonunion.*
- in bone healing, 249-250, 252
 - in triple arthrodesis, 695
 - vs. nonunion, 324
- Pseudoequino deformity, of ankle, 530
- Pseudomonas infections, postoperative, 241
- Psoriatic arthritis, heel pain in, 158
- Pulmonary dysfunction, in general anesthesia, 430
- Pulse evaluation, in preoperative examination, 222
- Pulsed direct current method, of electric stimulation, 930
- Pump bump. *See Haglund's deformity.*
- Puncture wound, treatment of, 760-761, 793-795, 903-904
- Radiation, wound healing retardation from, 780
- Radiography, in acute trauma, 896
- in bone graft healing, 456
 - in bone healing diagnosis, 250
 - in flexible flatfoot, 675
 - in lateral ankle instability, 582-584
 - in nonunion, 325
 - in reflex sympathetic dystrophy, 294
 - in subtalar joint pain, 486-487
 - preoperative, 894
- Radioisotope assessment, of vascular status, 917-918
- Radionuclide scintigraphy, in bone healing, 250
- in infection, 241-242
- Rearfoot surgery, Achilles tendon, 402-406, 513-542
- ankle arthrodesis, 424-426
 - ankle arthroplasty, anterior, 625-635
 - ankle arthrotomy, 429
 - ankle stabilization, lateral, 415-416, 579-600
 - bone graft in, 449-467
 - calcaneal osteotomy, 428
 - for retrocalcaneal exostosis, 659-665
 - posterior, 647-657
 - calcaneonavicular bar resection, 469-483
 - Cole osteotomy, 637-645
 - exostectomy, 601-623
 - fixation devices in, 433-446
 - in calcaneal fracture, 410-412
 - in Haglund's syndrome. *See Haglund's deformity.*
 - in heel spur, 409-410
 - in lateral collateral ligament instability, 414-415
 - in malleolar fractures, fibular, 419-421
 - medial, 421-424
 - posterior, 427
 - in os trigonum syndrome, 408-409, 617-620
 - in peroneal tendon subluxation, 555-577
 - in posterior muscle group dysfunction, 513-542
 - in posterior tibial tendon dysfunction, 543-554
 - media arch reconstruction, 428-429
 - medial column stabilization, 667-692
 - pantalar arthrodesis, 701-715
 - plantar fascia release, 409-410
 - posterior release, 426-427
 - posterior tendon exposure, 413-414
 - posteriorlateral tendon exposure, 415
 - sinus tarsi exposure, 416-417

- Rearfoot surgery (*Continued*)
 subtalar joint arthroplasty, 485-500
 subtalar joint fusion, 416-417
 sural neurolysis, 412
 surgical approaches in, 401-431
 tarsal coalition resection, 419
 tarsal tunnel decompression, 501-512
 tarsal tunnel release, 412-413
 tibial neurolysis, 412-413
 triple arthrodesis, 418, 693-699
- Reflex sympathetic dystrophy, 287-307
 case reports of, 299-306
 classification of, 288-289
 clinical presentation of, 289-291
 differential diagnosis of, 293-295
 heel pain in, 162
 historical review of, 287-288
 pathophysiology of, 291-293
 treatment of, 295-299
- Reiter's syndrome, heel pain in, 157
- Remodeling, of bone, fixation devices effects on, 311-312
 in wound healing, 723-724, 775
- Retrocalcaneal bursitis. See *Haglund's deformity*.
- Reverdin bunionectomy, preoperative criteria in, 235-236
- Reverdin-Isham procedure, minimal incision approach to, 81-94
- Reverse Dwyer calcaneal osteotomy, 652
- Rheumatoid arthritis, heel pain in, 159-161
 of subtalar joint, synovectomy-arthroplasty in, 496, 498
 vs. spondyloarthropathy, 155-156
- Rockerbottom foot, in diabetes mellitus, 847
 protective shoe for, 255-256
- Rowe classification, of calcaneal fractures, 769
- Samilson procedure, 415
- Sandals, for dorsal ulcers, 259
- Scars, formation of, 723-724
 hypertrophic, postoperative, 362-364
 in laser surgery, 402
 keloids, 362-363
- Scintigraphy (bone scan), in bone healing, 250
 in infection, 241-242
 in nonunion, 327
 in osteomyelitis, 266-267
 in reflex sympathetic dystrophy, 294-295
- Sclerosis, in nonunion, 325
- Screw fixation, in lesser metatarsal surgery, 391
 in rearfoot surgery fixation, 440-442
 migration in, 314
- Sedation, intravenous, complications of, 427-428
- Segmental blood pressure, in vascular assessment, 909-912
- Selakovich procedure, 418
- Sensory motor neuropathy, in diabetes mellitus, 843-845
- Seroma, in postoperative infection, 346-347
 wound healing retardation in, 778
- Serpentine incision, in Achilles tendon exposure, 405
- Sesamoid, anatomy of, 41-42
 disorders of, 43
 minimal incision approach to, 49-61
 in intractable plantar keratosis, 52-56, 58
 in lateral sesamoid problems, 58
 in medial pinch callous, 56-58
 in medial sesamoiditis, 49-51
 in subhallux sesamoid problems, 60
 function of, 42-43
 planing of, minimal incision approach to, 41-47
- Sesamoidectomy, deformity development after, 230
 fibular, iatrogenic hallux varus in, 370
 partial, minimal incision approach to, 41-47, 53-56
- Sesamoiditis, medial, 49-51
- Sever's gout, heel pain in, 162
- Sgarlato Z-plasty technique, in ankle equinus deformity, 536
- Shoes, corrective, for diabetic foot, 255-256
 for dorsal ulcers, 259
 pressure from, in ulcer formation, 252-253
- Silicone gel sheets, in hypertrophic scar prevention, 362, 364
- Silver bunionectomy, preoperative criteria in, 233
- Silver calcaneal osteotomy, 651-652
- Silver procedure, 415, 417, 421
- Silverskiöld procedure, in ankle equinus deformity, 533-534
- Silverskiöld test, in ankle equinus deformity, 527, 530, 534
- Sinus tarsi exposure, surgical approach for, 416-417
- Sinus tarsi syndrome, synovectomy-arthroplasty in, 493-495
- Skin, age-associated changes in, 817-818
 allergic response to fixation devices, 312-313
 breakdown of, in diabetes mellitus, 251-253, 255-257
- Skin graft, in injury, 904
 in keloid treatment, 365
- Sodium hypochlorite, wound healing and, 776
- Soft corn (heloma molle), preoperative criteria in, 227-228
- Soleus muscle, anatomy of, 515

- function of, 520–522
 Sorbitol level, neuropathic severity and, 253–254
 Sorbsan dressing, 791
 Spastic equinus deformity, ankle, 525–527
 Spinal anesthesia, complications of, 428
 Splintage fixation, 435
 Splinting, aggressive, iatrogenic hallux varus in, 372
 Split heel (Gaenslen) approach, in calcaneal fracture, 411–412
 Spondyloarthropathy, heel pain in, 154–156
 Spoon-toe deformity, of hallux, tenotomy in, 1–8
 Sprains, of subtalar joint, synovectomy-arthroplasty in, 493–495
 treatment of, 763, 765
 Spur, heel. *See Heel spur; Heel spur syndrome.*
 Staphylococcal infections, postoperative, 241, 342, 347–348, 350
 Staple fixation, in rearfoot surgery, 436–440
 Staplizer device, 437–440
 Steida's process fracture, surgical approach for, 408–409
 Steinmann pins, in rearfoot surgery, 435–436
 Steno hypothesis, of diabetic angiopathy, 260
 Strains, treatment of, 763, 765
 Strayer procedure, in ankle equinus deformity, 534–535
 Streptococcal infection, postoperative, 347–348, 350
 Stress, from fixation devices, 311
 Stress fluoroscopy, in bone healing diagnosis, 250
 in nonunion, 325
 Stress inversion test, in ankle instability, 582, 584
 Subhallux sesamoid, minimal incision approach to, 60
 Subtalar joint, arthritis of, synovectomy-arthroplasty in, 489, 493
 arthroplasty of, 485–500
 fusion of, surgical approach for, 416–417
 implant-related problems, synovectomy-arthroplasty in, 495
 injury of, in calcaneal osteotomy, 419, 421
 medial approach to, 419
 pain management in, 485–500
 in calcaneus-fibular impingement syndrome, 495
 in implant-related problems, 495
 in posttraumatic arthrosis, 489, 493
 in proprioceptive defect, 493–495
 in rheumatic disorders, 496
 in sinus tarsi syndrome, 493–495
 in sprain, 493–495
 in tarsal coalition, 489
 nonoperative, 487–488
 pathology staging in, 487
 preoperative evaluation in, 486
 radiography in, 486–487
 surgical procedure for, 488–489
 sprain of, synovectomy-arthroplasty in, 493–495
 synovectomy of, 485–500
 Sudeck's atrophy. *See Reflex sympathetic dystrophy.*
 Sudomotor instability, in reflex sympathetic dystrophy, 290
 Sural nerve, anatomy of, 520
 surgical approach for, 412
 Surgery, complications of. *See Complications of surgery; specific procedure.*
 techniques of, wound healing retardation from, 779
 Sutures, 361
 Swelling, in reflex sympathetic dystrophy, 289–290
 Syme's amputation, in diabetic foot, 269–270
 Sympathectomy, surgical, in reflex sympathetic dystrophy, 299
 Sympathetic ganglion block, in reflex sympathetic dystrophy, 297
 Syncope, from local anesthesia, 426
 Synovectomy, of subtalar joint, in painful conditions, 485–500
- Tailor's bunion, surgery for, 384–386
 lesser metatarsal osteotomy, minimal incision approach to, 32–35
 nonunion after, 390
 recurrence after, 386
 Talar tilt measurement, in ankle instability, 582–583
 Talofibular ligament, stabilization of, 584, 596
 Talonavicular joint, arthrodesis of, in medial column stabilization, 667
 Talus, avascular necrosis of, in triple arthrodesis, 695
 Tarsal arthrodesis, fixation devices for, 443, 445–446
 Tarsal coalition, posterior calcaneal osteotomy in, 653–655
 resection of, surgical approach for, 419
 subtalar joint synovectomy-arthroplasty in, 489
 Tarsal tunnel syndrome, 501–512
 anatomy of, 501–503
 clinical presentation of, 503
 conservative management of, 505
 differential diagnosis of, 505
 electrodiagnosis of, 504–505

- Tarsal tunnel syndrome (*Continued*)
 etiology of, 504
 release procedure in, surgical approach for, 412-413
 surgical management of, 505-511
 Tear injury, treatment of, 763, 765-767
 Technetium-99m-labeled albumin microspheres, in vascular assessment, 918
 Technetium 99m scan, in infection diagnosis, 241-242
 Tendo calcaneus, lengthening of, in ankle equinus deformity, 534
 Tendon(s), lengthening of, in heloma durum, of hallux, 227
 tear injury of, 763, 766-767
 Tenotomy, in hallux interphalangeal joint extensor, 1-8
 in heloma durum, of lesser digits, 225-226
 Tenotomy-capsulotomy, of extensor hallucis longus tendon, 9-12
 Tetanus prophylaxis, in acute trauma, 897-898
 in puncture wound, 794
 in trauma, 758
 Thallium-201, in vascular assessment, 918
 Thermal injury. See *Burns*.
 Thermography, in reflex sympathetic dystrophy, 295
 Thompson test, in Achilles tendon rupture, 766-767
 Thrombin, in wound healing, 728, 736
 Thrombosis, from tourniquet use, 431
 in diabetic ulcer, 260
 Thromboxanes, in wound healing, 730
 Tibial nerve, neurolysis of, surgical approach for, 412-413
 posterior, entrapment of. See *Tarsal tunnel syndrome*.
 Tibial nerve block, wound healing retardation from, 779
 Tibial sesamoid planing, minimal incision approach to, 41-47
 Tibial tendon, posterior, dysfunction of, 543-554
 case reports of, 551-553
 clinical presentation of, 543-544
 diagnosis of, 544-545
 etiology of, 543-544
 flexor digitorum longus tendon transfer in, 548-551
 surgical approach for, 413-414
 surgical treatment of, 545-553
 Tibiotalar impingement, anterior ankle arthroplasty in, 625-635
 Tissue reaction, from local anesthesia, 426
 Titanium, in fixation devices, allergy to, 313
 Toe(s), blood pressure in, measurement of, 911-912
 clawing of, in diabetes mellitus, 847
 contracture of, in lesser metatarsal surgery, 392
 deformities of, in diabetes mellitus, 251
 preoperative criteria in, 224-228
 fifth, heloma durum of, preoperative criteria in, 224-225
 floating in lesser metatarsal surgery, 393
 fracture of, 768
 gangrene of, 268-269
 great, deformities of. See *Hallux valgus; Hallux varus*.
 implant arthroplasty of, operative correction loss in, 273-276
 lesser, heloma durum of, preoperative criteria in, 225-226
 osteomyelitis of, 267
 Topical medications, for pressure ulcers, 884-885
 for wound care, 791-792, 823
 healing and, 776
 Torsion wedge pseudarthrosis, 249-250
 Tourniquets, complications of, 430-431
 Toxicity, of local anesthesia, 427
 Tranquilizers, in reflex sympathetic dystrophy, 297-298
 Transcuboidal osteotomy, in Cole osteotomy, 637-645
 Transcutaneous nerve stimulation, in reflex sympathetic dystrophy, 296
 Transcutaneous oxygen pressure, in diabetic foot evaluation, 258
 in vascular assessment, 916-917
 Transforming growth factors, in wound healing, 735, 742, 943-944
 Trauma, acute, management of, 757-771
 abrasions, 762
 antibiotics in, 897
 burns. See *Burns*.
 closed tear injury, 763, 765-767
 debridement in, 897
 dislocations, 767-768
 examination in, 896-897
 fractures. See *Fractures*.
 injection wound, 761-762
 irrigation in, 897
 laboratory studies in, 896
 lacerations, 763
 open fractures, 901
 principles of, 757-760
 projectile, 904-905
 puncture wound, 760-761, 793-795,
 904
 radiology in, 896
 tetanus prophylaxis in, 897-898
 tissue viability assessment in, 898-902
 triage in, 895-896
 Traumatic dystrophy, 288-289
 Triage, in wound management, 896-897

Triceps surae muscles, stretching of, in ankle equinus deformity, 526
Triple arthrodesis, 693-699
alternatives to, in subtalar joint pain, 485-500
complications of, 695-697
during pantalar arthrodesis, 707, 709
fixation in, 694-695
indications for, 693-694
pantalar arthrodesis after, 701
surgical approach for, 418
techniques for, 694-695
Tumor(s), heel pain in, 162
Tumor necrosis factor-alpha, in wound healing, 745
Turco incision, in clubfoot, 427

Ulcers, healing of, electrical stimulation in.
See *Electrical stimulation*.
in diabetic foot. See under *Diabetic foot*.
pressure. See *Pressure sores/ulcers*.
venous, treatment of, 824
Union, delayed, 248-249, 251-253. See also *Nonunion*.
after lesser metatarsal surgery, 389-390
Unna's boot, 791
Urinary incontinence, pressure ulcer management and, 881
Urticaria, from metallic fixation devices, 312-313

Vascular disease, peripheral. See *Peripheral vascular disease*.
Vascular injury, assessment of, 900-901
repair of, 901-902
Vascular reconstruction, in arterial blockage, 261-262
Vascular response, to injury, 730-731
Vascular status, assessment of, 792-793,
909-921
in acute trauma, 759
in diabetic patient, 846-847
laser Doppler velocimeter in, 916
photoplethysmography in, 913
plethysmography in, 912
radioisotopic, 917-918
segmental blood pressure in, 909-912
transcutaneous oxygen pressures in, 916-917
Vasoactivity, in wounded tissue, 731
Vasodilators, in reflex sympathetic dystrophy, 297
Vasomotor instability, in reflex sympathetic dystrophy, 290
Velocimeter, laser Doppler, in vascular assessment, 916

Venous ulcers, treatment of, 824
Verruca, laser surgery on, 404-405
Viruses, in laser plume, 403-404
Vitamin deficiency, wound healing and, 782
Vomiting, from general anesthesia, 429-430
von Willebrand's disease, wound healing in, 783
Vulpius-Stoffel procedure, for Achilles tendon lengthening, 533

Warfarin, wound healing and, 776-777
Warts, laser surgery on, 404-405
Watson-Jones tenodesis, in lateral ankle stabilization, 584
Weber-Cech classification, of bone nonunion, 925
Weinberger bunionectomy, 111-136
White procedure, in ankle equinus deformity, 534
Wilson bunionectomy, minimal incision approach to, 95-110
preoperative criteria in, 235-236
Wire fixation, in lesser metatarsal surgery, 391-392
in rearfoot surgery, 435-436, 440
migration in, 314
Wolff's law, 311-312
Wound, classification of, 787-789
cleansing of, 801-802
closure of, 361, 758-759, 823, 902-903
debridement of. See *Debridement*.
dehiscence of, 359-362
treatment of, 823-824
depth of, in laser surgery, 401-402
examination of, 896-897
healing of. See *Wound healing*.
management of, in postoperative infection, 243-244
oxygen delivery disturbance in, 724-727
postoperative infection in. See *Infection, postoperative*.
surgical management of, 891-897
closure methods for, 903-904
historical perspective of, 891-893
in trauma, 895-902
postoperative care in, 895
principles of, 893-894
projectile, 904-905
puncture, 904-905
techniques in, 895-896
Wound healing, acute inflammatory phase in, 730-733
acute trauma management and, 757-771, 895-902
osseous, 767-770
soft-tissue, 760-767
age-associated skin changes and, 817-818

- Wound healing (*Continued*)
angiogenesis in, 939
antiseptic effects on, 884–885
arthritis effects on, 820
closure techniques and, 903–904
complications of, **773–785**
 extrinsic factors in, 778–780
 pharmacologic causes of, 775–777
 systemic causes of, 780–784
conservative management and, **787–798**
contraction in, 787
coronary disease effects on, 818–819
debridement and, 800–802
dehiscence in, 823–824
dressing effects on. See *Dressings*.
dynamics of, **723–756**
 acute inflammatory phase in, 730–733
 hemostasis in, 730
 inflammatory mediators in, 728–730
 initial response to injury and, 724–727
 matrix regeneration phase of, 733–747
edema in, 822
electrical stimulation for, **827–841**, 864–865
epidermal growth factor in, 745–747, 944–947
epithelialization in, 789
fibroblast growth factor in, 939–943
growth factors in, **745–747**, **937–953**
hemostasis in, 730
historical perspective of, 891–893
in diabetes mellitus, 820
 growth factors and, 948–949
in elderly persons, 782–783, **817–826**
infection and, 778, 820, 822, 824
inflammatory mediators in, 728–730
initial response to injury and, 724–727
lactate changes during, 727
malnutrition effects on, 781–782, 820–821
matrix regeneration phase of, 733–747
of abrasions, 762
of burns, 762–763
of closed tear injury, 763, 765–767
of dislocations, 767–768
of fractures, 768–770
of gunshot injury, 904–905
of injection injury, 761–762
of lacerations, 763
of postoperative infection, 353
of pressure sores. See *Pressure sores/ulcers, treatment of*
of puncture wound, 760–761, 793–795, 904
of surgical incisions, 894–895
of thermal injury, 762–763, 793
of ulcers. See *Electrical stimulation; Pressure sores/ulcers*.
oxygen dynamics in, 724–727, 792–793, 821–822
peripheral vascular disease effects on, 819
platelet-derived formula for, 949–951
platelet-derived growth factor in, 947–949
postoperative, tissue handling techniques
 and, 894–895
process of, 359–360
proliferative phase of, 774
remodeling phase of, 723–724, 775
scar formation in, 723–724
stages of, 773–775
substrate phase of, 773–774
surgical management in, **891–907**
time of, vs. area, 787
topical medications in. See *Topical medications*.
transforming growth factor in, 735, 742, 943–944
vascular status in, 792–793
 assessment of, **909–921**
wound classification and, 787–789
- Yeast infections, postoperative, 348
- Z-plasty, in hypertrophic scar prevention, 362
Zadek approach, in Haglund's deformity resection, 407
Zinc deficiency, wound healing and, 782

